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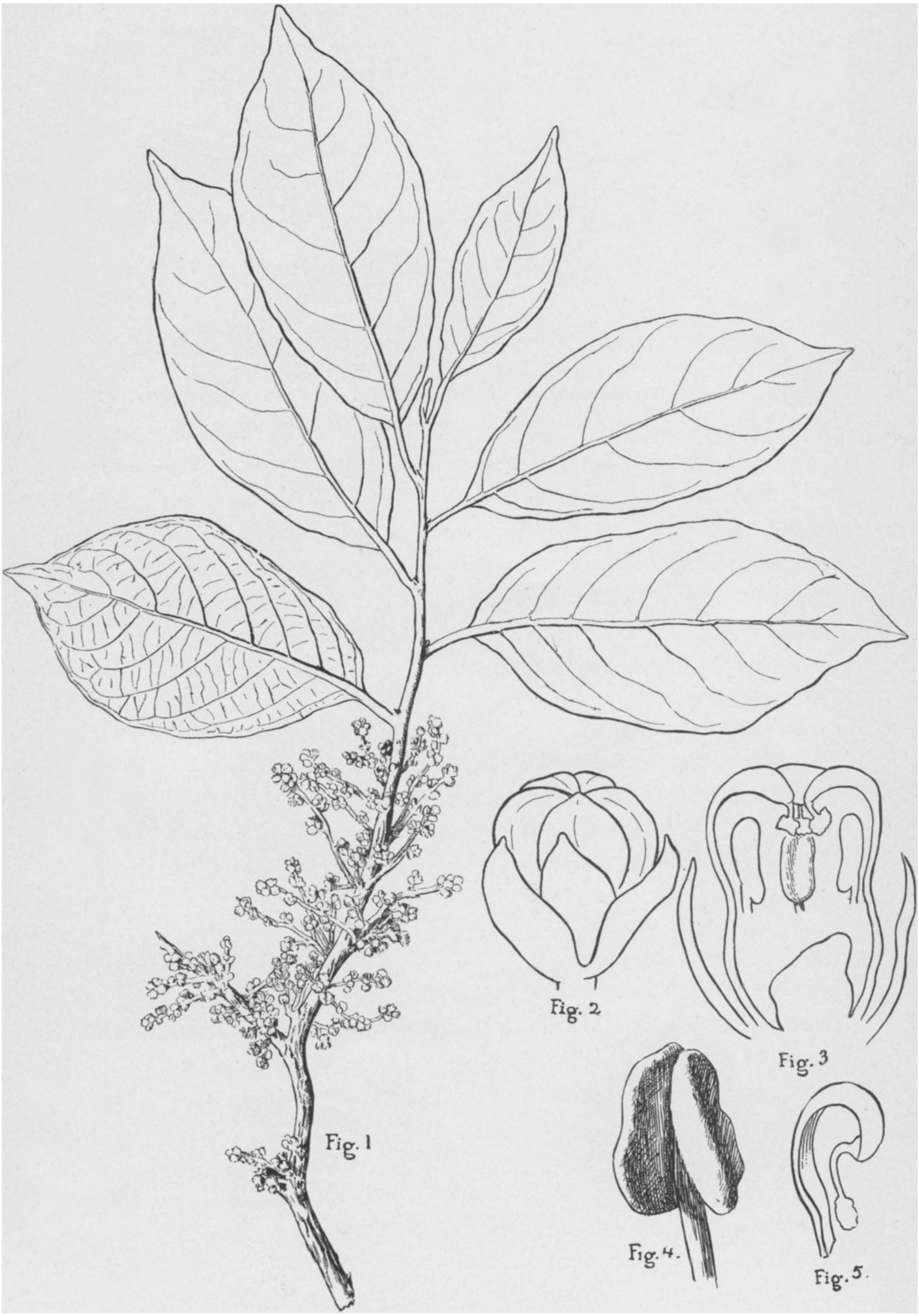

DENDROBANGIA RUSBY.

*melia, Sticta, Lecidea, Biatora*) have an indeterminate existence. The life-period does not terminate with the maturation of the spores, as with the majority of fungi.

8. The spore-bearing tissue of lichens is of little functional value, hence it degenerates or becomes converted into a chlorophyll-bearing assimilating tissue (sterile *Parmelias* and *Cladonias*; podetia of *Cladonia*, thalloid exciple). Among the fungi the sporogenous tissue becomes functionally more and more specialized.

9. Lichens contain chemical compounds (lichenin, acids, etc.) which do not occur among fungi.

10. Morphological similarities (in the vegetative tissues of lichens and fungi they rarely occur) do not indicate similarity in function. (See 1.)

Finally I will again urge the necessity of conducting modern biological research from the standpoint of morpho-physiology. It will be productive of reliable and harmonious conclusions.

## The Affinities of Dendrobangia Rusby.*

By H. H. Rusby.

(Plate 294.)

The family Olacineae, as treated by Bentham and Hooker (Gen. Plant, 1: 342 and 995) comprises four tribes. Olaceae has the ovary normally 3–5-celled, occasionally 1-celled by suppression, with two pendulous ovules in each cell. Opilieae has the ovary 1-celled, with one erect ovule. Icacineae has the ovary normally 1-celled with two, rarely one by abortion, unilaterally dendulous ovules. Phytocraneae has characters very similar to those last mentioned.

Dr. Engler (Pflanzenfamilien, 3: Abt. 5, 233) separates the two tribes last mentioned, under the family Icacinaceae, grouping them with the Aceraceae, Celastraceae and Anacardiaceae, referring the Euphorbiaceae, also to this group. The two tribes first mentioned he retains in the family Olacinaceae and groups them with the Aristolochiaceae, Loranthaceae and Urticaceae.

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* Mem. Torr. Bot. Club, 6: 19.

The affinities of *Dendrobangia* are clearly with the Icacinaceae. Of this Dr. Engler makes three sub-families, to one of which, the Icacinoideae, with 1-celled ovary, *Dendrobangia* pertains. Of the four tribes of this sub-family, three comprise only climbing plants and their floral characters exclude the genus under consideration, which is clearly a member of the tribe Icacineae. In this tribe Dr. Engler recognizes 26 genera, all but 7 of them having the calyx gamosepalous, thus excluding *Dendrobangia,* the sepals of which are barely coherent at the base. Of these 7 genera, *Villaresia* is the only one known to have representatives in America. *Villaresia* has the petals imbricate, while in *Dendrobangia* they are perfectly valvate. From the six foreign genera the plant is distinguished as follows: *Cassinopsis,* of Africa, has the stamens opposite the petals. *Leptaulus,* of Africa, has a slender infundibular corolla. *Alsodeiopsis,* of Africa, has the filaments free from the corolla-tube. *Platea,* of Polynesia, is polygamous, and has the stamens free. *Sarcanthidion,* of New Caledonia, has the petals imbricate, like *Villaresia.* It may be said that, in addition to the characters given, none of the above have apical appendages to the petals, while this is a most important character of *Dendrobangia.* Although the remaining genus, *Chariessa,* of New South Wales, has such appendages, they are very different from those of *Dendrobangia.* The petals of *Chariessa*, moreover, are distinct, except at the very base, and its stamens are free. The characters of filament and anther and the absence of a style would also certainly exclude *Dendrobangia* from that genus. It appears, therefore, that the plant is strikingly distinct from any other genus, and that it combines in a remarkable manner the characters of the associated genera. It agrees with *Villaresia* in the general ovary-characters, with *Alsodeiopsis* and *Leptaulus* in the partially gamopetalous corolla, with *Leptaulus* in the adnate filaments, with *Platea* in the sessile stigma, and with *Chariessa* in having apical petal-appendages.

In the description of the plant already published, a number of points were misinterpreted or overlooked, and that description should be amended as follows: The sepals are barely coherent at the base, which fact, taken in connection with its general characters, must place it in the first section, described as having a chorisepalous calyx. The term "corolla-lobes" and not "petals," should be used, as the corolla is gamopetalous nearly to the middle. The corolla-appendages are lacerate-toothed rather than " bearded." The mature stamens are more than " half the length of the corolla exclusive of its appendages." The appendages of the petals appear to elongate considerably during the opening of the bud, and they are widely explanate when the flower is expanded, becoming early detached. They appear to act as pollen-holders. Their mode of origin is peculiar. They are not continuous with the tips of the petals, but originate from the inner face of the latter.

### Explanation of Plate 294.

Fig. 1. Flowering branch, slightly reduced.
Fig. 2. A bud.
Fig. 3. Longitudinal section of bud, showing concave lateral face of theca.
Fig. 4. Anther, showing attachment of connective.
Fig. 5. A petal with its appendage.

## Some new Fungi, chiefly from Alabama.

BY LUCIEN MARCUS UNDERWOOD.

In certain favorable seasons the Southern States offer fine opportunities for field work in mycology. It is fortunate that we are beginning to have intelligent field workers that are resident instead of transient collectors, for it is only by persistent resident work that anything like a clear understanding of the flora can be obtained. While much is still to be desired in many of the Southern States, it can safely be said that the States of Alabama and Mississippi, at least, are now fairly well equipped with local workers, as compared with neighboring States, if one or two workers for an area of 50,000 square miles can be regarded as a fair equipment. Many species are comparatively ephemeral, and only the local observer who is at hand at the favorable moment is able to gather the harvest. The fall season of 1895 was specially unfavorable for field work, on account of excessive drought, and this condition prevailed more or less throughout the spring season. In fact, not until July, 1896, were the rains sufficient to bring out the normal hymenomycetous flora. Since that time, and particularly during the months of October, November and December,